

I claim:

1. Apparatus for storing and dispensing a material from a pressurized container while maintaining the integrity or purity of the material to be dispensed, the apparatus comprising:
 - a) a pressurized container holding the material to be dispensed, the pressurized container having a dispensing valve with a dispensing valve stem having a distal end protruding from the pressurized container and a proximal end extending into the pressurized container;
 - b) a syringe provided with 1) an on/off locking member for permitting/or preventing flow of the material into or out of a chamber of the syringe and 2) a stem having an end extending from the syringe for receiving material from the pressurized container; and
 - c) a removable adaptor connecting the distal end of the dispensing valve stem protruding from the pressurized container to the end of the stem extending from the syringe so as to establish a permissible flow path from one stem to the other stem;so that upon activation of the on/off locking member to the on position for permitting flow of material into the syringe and activation of the dispensing valve to a dispensing mode material may flow from the pressurized container to the chamber of the syringe.
2. Apparatus according to claim 1 wherein the dispensing valve comprises a reciprocatably actuated valve.
3. Apparatus according to claim 2 wherein the valve stem of the dispensing valve is hollow but is closed at the proximal end in the container and is provided with one or more covered openings along the stem, the valve stem being reciprocatably movable inward into the pressurized container for uncovering the one or more openings in the valve stem for permitting the flow of material from the pressurized container through the one or

more openings, into the valve stem, and into the chamber of the syringe.

4. Apparatus according to claim 3 wherein the one or more openings in the dispensing valve stem are located circumferentially around the dispensing valve stem and are covered by a gasket until the dispensing valve stem is moved reciprocatably inward into the pressurized container for uncovering the one or more openings.
5. Apparatus according to claim 4 wherein the gasket is a ring of material surrounding the dispensing valve stem in a slidable manner.
6. Apparatus according to claim 1 wherein the pressurized container holding the material to be dispensed is a positive dispense container comprising a pressurized container having therein a bag containing the material to be dispensed, said bag being connected to the dispensing valve in fluid flow relationship, and said bag being surrounded by pressurizing gas in the container.
7. Apparatus according to claim 5 wherein the pressurized container holding the material to be dispensed is a positive dispense container comprising a pressurized container having therein a bag containing the material to be dispensed, said bag being connected to the dispensing valve in fluid flow relationship, and said bag being surrounded by pressurizing gas in the container.
8. Apparatus according to claim 7 wherein the bag is connected to the dispensing valve through a valve connector, the valve connector having a central opening for permitting the material to flow out of the bag, the dispensing valve stem is seated in the valve connector in a biased manner in a direction outwardly from the pressurized container preventing flow of

material out through the valve stem until actuation of the dispensing valve.

9. The apparatus according to claim 8 wherein the dispensing valve stem is seated upon a biasing spring in the valve connector.
10. The apparatus according to claim 1 wherein the adaptor comprises two female sockets connected by a central material flow path passageway in the adaptor, one of the female sockets connected to the distal end of the dispensing valve stem and the other female socket connected to the end of the stem of the syringe for permitting the flow of the material from the dispensing valve stem to the syringe stem so that the material may flow from the pressurized container to the chamber of the syringe without exposure to the atmosphere.
11. The apparatus according to claim 8 wherein the adaptor comprises two female sockets connected by a material flow path, one of the female sockets connected to the distal end of the dispensing valve stem and the other female socket connected to the end of the stem of the syringe for permitting the flow of the material from the dispensing valve stem to the syringe stem so that the material may flow from the pressurized container to the chamber of the syringe.
12. The apparatus according to claim 11 wherein the on/off locking member on the syringe is a luer lock.
13. The apparatus according to claim 12 wherein the syringe is provided with a reciprocatably actuated piston extending outwardly from the chamber of the syringe at an end of the syringe opposite the syringe stem.
14. The apparatus according to claim 6 wherein a desiccant material is

located in the pressurized gas surrounding the bag.

15. The apparatus according to claim 7 wherein a desiccant material is located in the pressurized gas surrounding the bag.
16. A method for storing and dispensing a material from a pressurized container while maintaining the integrity or purity of the material to be dispensed, the method comprising:
 - a) providing a pressurized container holding the material to be dispensed, the pressurized container having a dispensing valve with a dispensing valve stem having a distal end protruding from the pressurized container and a proximal end extending into the pressurized container;
 - b) providing a syringe provided with 1) an on/off locking member for permitting/or preventing flow of the material into or out of a chamber of the syringe and 2) a stem having an end extending from the syringe for receiving material from the pressurized container; and
 - c) providing a removable adaptor for connecting the distal end of the dispensing valve stem protruding from the pressurized container to the end of the stem extending from the syringe so as to establish a permissible flow path from one stem to the other stem;
 - d) connecting the adaptor to the distal end of the dispensing valve stem protruding from the pressurized container to the end of the stem extending from the syringe; and
 - e) activating the on/off locking member to the on position for permitting flow of material into the syringe;
 - f) activating the dispensing valve to a dispensing mode permitting material to flow from the pressurized container to the chamber of the syringe; and
 - g) activating the on/off locking member to the off position to isolate the material in the chamber of the syringe.

17. The method according to claim 16 comprising the additional step of subsequently replacing the stem of the syringe with a needle, activating the on/off locking member to the on position and expelling material from the syringe chamber to a closed system where the material is to be employed.
18. A method according to claim 17 wherein the dispensing valve comprises a reciprocatably actuated valve.
19. A method according to claim 18 wherein the valve stem of the dispensing valve is hollow but is closed at the proximal end in the container and is provided with one or more covered openings along the stem, the valve is actuated by the valve stem being reciprocatably moved inward into the pressurized container thereby uncovering the one or more openings in the valve stem and permitting the flow of material from the pressurized container through the one or more openings, into the valve stem, and into the chamber of the syringe.
20. A method according to claim 19 wherein the one or more openings in the dispensing valve stem are located circumferentially around the dispensing valve stem and are covered by a slidable gasket and when the dispensing valve stem is moved reciprocatably inward into the pressurized container the one or more openings is/are uncovered by the gasket to provide for flow of the material into the one or more openings.
21. A method according to claim 20 wherein the pressurized container holding the material to be dispensed is a positive dispense container comprising a pressurized container having therein a bag containing the material to be dispensed, said bag being connected to the dispensing valve in fluid flow

relationship, and said bag being surrounded by pressurizing gas in the container, whereby upon activation of the dispensing valve the pressurizing gas forces material from the bag through the dispensing valve and into the syringe chamber.

22. A method according to claim 21 wherein the bag is connected to the dispensing valve through a valve connector, the valve connector having a central opening for permitting the material to flow out of the bag, the dispensing valve stem is seated in the valve connector in a biased manner in a direction outwardly from the pressurized container preventing flow of material out through the valve stem until actuation of the dispensing valve occurs
23. A method according to claim 22 wherein the dispensing valve stem is seated upon a biasing spring in the valve connector and activation of the dispensing valve causes the biasing spring to be contracted permitting the dispensing valve stem to further enter the pressurized container to uncover the gasket from the one or more openings circumferentially around the stem.
24. A method according to claim 22 wherein the adaptor comprises two female sockets connected by a central material flow path passageway in the adaptor, and the adaptor is connected to the two stems by connecting one of the female sockets to the distal end of the dispensing valve stem and the other female socket to the end of the stem of the syringe.
25. A method according to claim 24 wherein the material to be dispensed is an ultra dry solvent.
26. A method according to claim 16 wherein the material to be dispensed is

an ultra dry solvent.

27. A method according to claim 16 comprising the additional steps of subsequently replacing the syringe stem with a needle while the locking member is in the off position, and then activating the locking member to the on position and expelling material from the syringe chamber to a closed reactor or vessel.
28. A method according to claim 27 wherein the material is expelled from the syringe chamber by means of a reciprocatable syringe piston.
29. The method according to claim 19 wherein a desiccant material is located in the pressurizing gas and absorbs moisture in the container.